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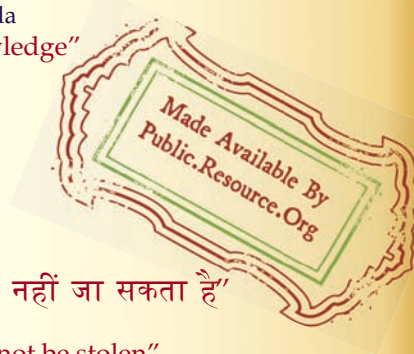
IS 1628 (1986): Axle Oil [PCD 3: Petroleum, Lubricants and their Related Products]



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Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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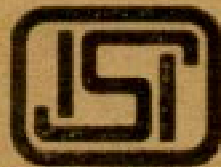
Indian Standard

(Reaffirmed 2002)

SPECIFICATION FOR AXLE OIL

(*Second Revision*)

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NEW DELHI 110002

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SPECIFICATION FOR AXLE OIL

(*Second Revision*)

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Indian Standard

SPECIFICATION FOR AXLE OIL

(Second Revision)

0. FOREWORD

0.1 This Indian Standard (Second Revision) was adopted by the Indian Standards Institution on 3 March 1986, after the draft finalized by the Lubricants and Related Products Sectional Committee had been approved by the Petroleum, Coal and Related Products Division Council.

0.2 This standard was formulated in 1960 based on DGS & D and other overseas specifications. It was revised in 1971 when organic acidity, saponification value and viscosity index requirements of all the grades of the regular type were modified. Also, the premium type oil was deleted since it was neither being produced in the country, nor there was any demand for it. In 1977 the standard was again amended to incorporate the requirements for water content.

0.3 The present revision has been prepared by the Committee in cooperation with the Indian Railways, the main user of this product, in the light of the current requirements for axle oils. In this revision the flash point of the heavy grade has been modified and an additional requirement for asphaltene content has been incorporated based on the data collected by RDSO, Lucknow.

0.4 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard prescribes the requirements and the methods of sampling and test for axle lubricating oil, primarily intended for use as a lubricant in plain bearing axles, used by Railways and other users.

*Rules for rounding off numerical values (revised).

2. GRADE

2.1 Axle oil shall be of the following three grades based on their viscosities:

- a) Light,
- b) Medium, and
- c) Heavy.

3. REQUIREMENTS

3.1 General — The oil shall consist wholly of mineral oil and shall be free from suspended matter, sediment or any other extraneous impurities.

3.2 The oil shall also comply with the requirements prescribed in Table 1 when tested according to the methods prescribed under IS : 1448*, reference to which is given in col 6 of Table 1.

4. PACKING AND MARKING

4.1 Packing — The material shall be supplied in suitable containers as agreed between the purchaser and the supplier.

4.2 Marking — The container shall be securely closed and marked with the name of the manufacturer; name, grade and mass of the material; recognized trade-mark, if any; and with identification in code or otherwise to enable the lot of consignment or manufacture to be traced back from the records.

4.2.1 The container may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act, and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard, under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

5. SAMPLING

5.1 Representative samples of the oil shall be drawn as prescribed in IS : 1447-1966†.

*Methods of test for petroleum and its products.

†Methods of sampling of petroleum and its products.

TABLE 1 REQUIREMENTS FOR AXLE OIL

(Clause 3.2)

SL No.	CHARACTERISTIC	REQUIREMENT FOR			METHOD OF TEST (REF TO [P :] IN IS : 1448*)
		Light Grade (3)	Medium Grade (4)	Heavy Grade (5)	
(1)	(2)				(6)
i)	Acidity				P : 2
	a) Inorganic	Nil	Nil	Nil	
	b) Organic (mg of KOH/g of the oil), <i>Max</i>	1.0	1.0	1.0	
ii)	Ash, percent by mass, <i>Max</i>	0.05	0.05	0.05	P : 4 (Method A)
iii)	Pour point, <i>Max</i>	—3°C	—3°C	—3°C	P : 10
iv)	Copper-strip corrosion, for 3 hours at 100°C	Not worse than No. 1	Not worse than No. 1	Not worse than No. 1	P : 15
v)	Flash point closed (Pensky- Martens), <i>Min</i>	160°C	160°C	160°C	P : 21
vi)	Asphaltene content, percent by mass, <i>Max</i>	0.5	0.5	0.5	P : 22
vii)	Kinematic viscosity at 60°C in centistokes	64 to 71	76 to 86	90 to 103	P : 25
viii)	Water content, percent by mass, <i>Max</i>	0.5	0.5	0.5	P : 40
ix)	Saponification value (mg of KOH/g of the oil), <i>Max</i>	1.5	1.5	1.5	P : 55
x)	Viscosity index, <i>Min</i>	40	40	40	P : 56

*Methods of test for petroleum and its products.

(Continued from page 2)

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